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CONDITION SURVEY, PLATTSBURGH AIR FORCE BASE, NEW YORK.(U)
JUN 73 R D JACKSON, J C HART, G D GILMAN

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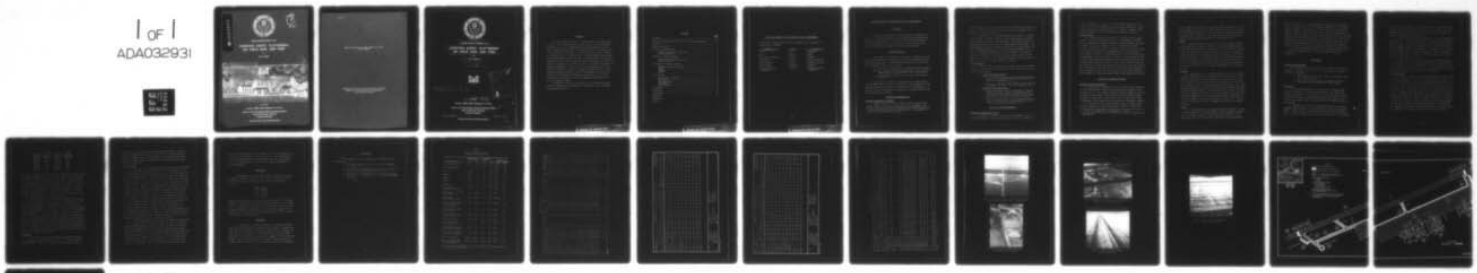

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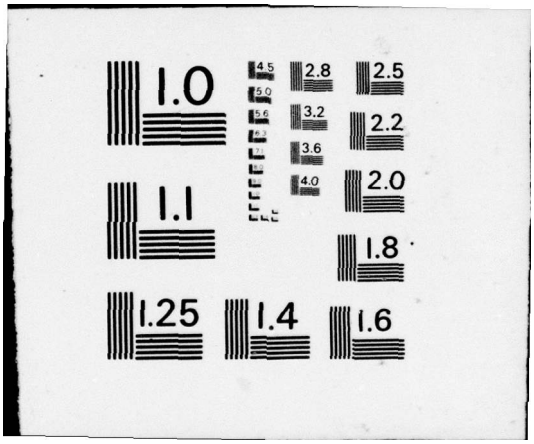
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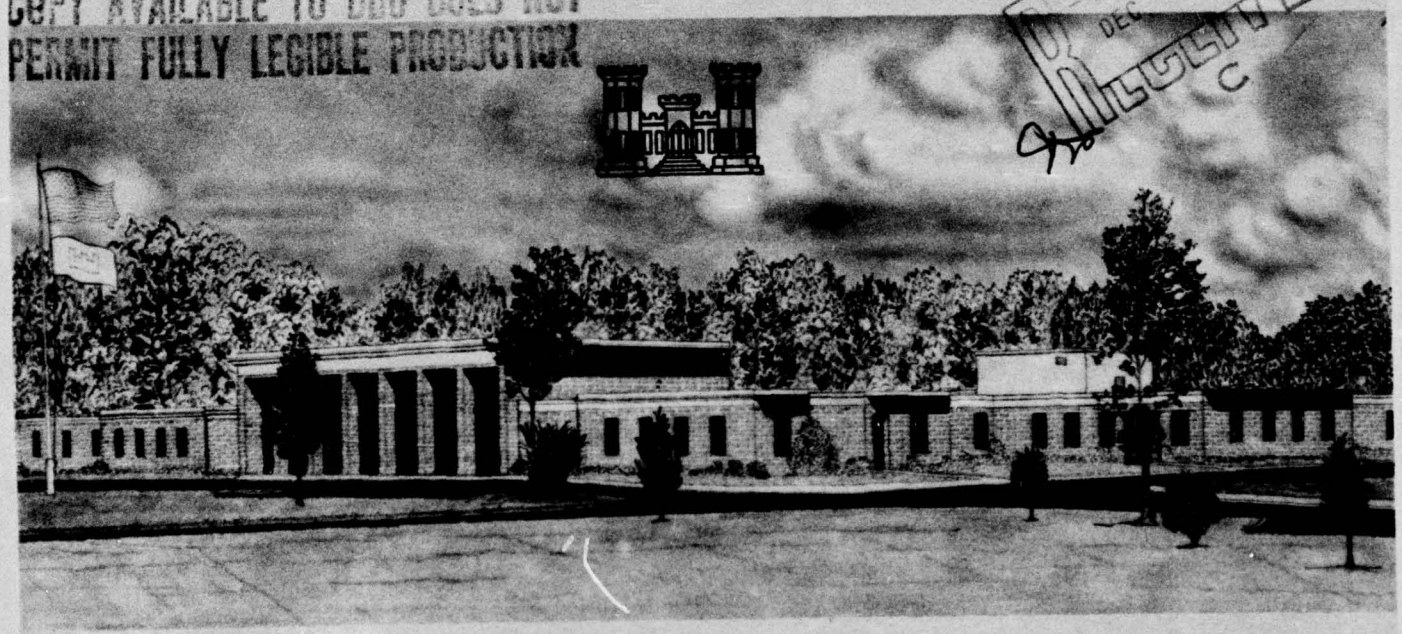
MISCELLANEOUS PAPER S-73-46

# CONDITION SURVEY, PLATTSBURGH AIR FORCE BASE, NEW YORK

by

R. D. Jackson





June 1973

Sponsored by Office, Chief of Engineers, U. S. Army

Conducted by U. S. Army Engineer Waterways Experiment Station
Soils and Pavements Laboratory
Vicksburg, Mississippi

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(9) MISCELLANEOUS PAPER S-73-46

# (6) CONDITION SURVEY, PLATTSBURGH AIR FORCE BASE, NEW YORK.

by

(10) R. D. Jackson
J. C. Hart
G. D. Gilman



(14) WES-MP-S-73-46

(11) June 1973 (12) 26p.

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ARMY-MRC VICKSBURG, MISS



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## Foreword

The study reported herein was conducted under the general supervision of the Engineering Design Criteria Branch, Soils and Pavements Laboratory, of the U. S. Army Engineer Waterways Experiment Station (WES), Vicksburg, Mississippi. Personnel involved in the condition survey were Messrs. R. D. Jackson, P. S. McCaffrey, Jr., and W. J. McKay of the WES and Mr. J. C. Hart of the U. S. Army Engineer Division, New England (NED), Waltham, Massachusetts. The main portion of this report was prepared by Mr. Jackson under the general supervision of Messrs. J. P. Sale, R. G. Ahlvin, R. L. Hutchinson, and P. J. Vedros of the Soils and Pavements Laboratory. That portion of the study pertaining to frost action was carried out by the U. S. Army Cold Regions Research and Engineering Laboratory (CRREL), Hanover, New Hampshire, with the assistance of the Foundations and Materials Branch, NED. The section of this report concerning frost action was prepared by Mr. Hart and by Mr. G. D. Gilman of CRREL.

COL Ernest D. Peixotto, CE, was Director of the WES during the conduct of the study and preparation of the report. Mr. F. R. Brown was Technical Director.

Contents

## Conversion Factors, British to Metric Units of Measurement

British units of measurement used in this report can be converted to metric units as follows:

| Multiply | By | To Obtain |
|---|---|---|
| inches | 2.54 | centimeters |
| feet | 0.3048 | meters |
| miles (U. S. statute) | 1.609344 | kilometers |
| square inches | 6.4516 | square centimeters |
| miles per hour | 1.609344 | kilometers per hour |
| pounds (mass) | 0.45359237 | kilograms |
| pounds (force) per square inch | 0.6894757 | newtons per square centimeter |

# CONDITION SURVEY, PLATTSBURGH AIR FORCE BASE, NEW YORK

## Authority

1. Authority for conducting condition surveys at selected airfields is contained in amendment to FY 1972 RDTE Funding Authorization (MFS-MC-5, 16 February 1972), subject: "Air Force Airfield Pavement Research Program," from the Office, Chief of Engineers, U. S. Army, Directorate of Military Construction, dated 18 February 1972.

## Purpose and Scope

2. The purpose of this report is to present the results of a condition survey performed at Plattsburgh Air Force Base (PAFB), New York, during 7-10 August 1972. The following three major areas of interest were considered in this condition survey:

a. The structural condition of the primary airfield pavements.

b. The condition of pavement repairs and the types of maintenance materials that have been used at this airfield.

c. Any detrimental effects of frost action to the pavement facilities.

3. This report is limited to a presentation of visual observations of the pavement conditions, discussion of these observations, and pertinent remarks with regard to the performance of the pavements. No physical tests of the pavements, foundations, or patching materials were performed during this survey.

## Pertinent Background Data

### General description of airfield

4. PAFB is located in Clinton County, New York, approximately 3 miles* south of the city of Plattsburgh, on Lake Champlain. The

* A table of factors for converting British units of measurement to metric units is presented on page vii.

airfield is bounded on the west and north by State Route 22, on the east by U. S. 9 and Lake Champlain, and on the south by the Salmon River. A vicinity map is shown in plate 1.

5. In August 1972, the airfield facilities consisted of a NW-SE (17-35) runway, a parallel taxiway, a large parking apron, two warm-up aprons, connecting taxiways from the runway to the parallel taxiway, a calibration hardstand, and a series of hangar aprons and taxiways. The NW-SE runway was 11,760 ft long and 300 ft wide; the taxiways were 75 ft wide; the parking apron was 8,835 ft long and approximately 1,100 ft wide; the calibration hardstand was 275 ft in diameter; the warm-up aprons were irregular in shape; and the hangar aprons were of various dimensions. A layout of the airfield and a pavement plan indicating the type pavement on each facility are shown in plate 1.

Previous reports

6. Previous reports concerning the airfield pavements at PAFB are listed below. Pertinent data were extracted from them for use in this condition survey report.

a. Condition survey reports:

(1) Ohio River Division Laboratories, CE, "Condition Survey Report, Plattsburgh AFB, Plattsburgh, New York," October 1957, Mariemont, Ohio.

(2) _____, "Condition Survey Report, Plattsburgh AFB, Plattsburgh, New York," June 1960, Mariemont, Ohio.

b. Pavement evaluation reports:

(1) Goodkind and O'Dea, Consulting Engineers, "Airfield Pavement Evaluation Report, Plattsburgh AFB, New York," March 1958, prepared for the U. S. Army Engineer District, New York, CE, New York, New York.

(2) Civil Engineering Center, Wright-Patterson AFB, "Airfield Pavement Evaluation Report, Plattsburgh AFB, New York," January 1972, Dayton, Ohio.

## History of Airfield Pavements

Design and construction history

7. The runway, taxiways, and aprons were designed to carry a 100,000-lb loading on dual wheels spaced 37 in. center to center, with

a tire contact area of 267 sq in. The hangar access aprons were designed for an 80,000-lb loading on the same gear configuration. Details of the construction history are presented in table 1. Pavement thicknesses, descriptions, and other details are presented in table 2.

Traffic history

8. A detailed traffic record was not available for this study; however, based on the incomplete records, it is reasonable to assume that the airfield has sustained at least the following number of cycles* of traffic per type of aircraft: B-47's, 42,000; B-52's, 3,400; KC-135's, 8,000; KC-97's, 17,000; C-141's, C-135's, C-124's, and C-133's, 1,900; and all other aircraft, approximately 34,000. In addition to these amounts of traffic, a considerable number of alert exercises have been performed, some of which have consisted of taxiing from the apron to the end of the runway and returning to the apron, while others have consisted of taxiing from the apron to the end of the runway, taxiing down the length of the runway, and returning to the apron. One hundred sixty-five such movements involving B-47's have been performed at 230,000-lb gross loadings. Records available indicate that 156 alert movements of B-52 aircraft have been made at gross loads of approximately 480,000 lb.

## Conditions of Pavement Surfaces

Pavement inspection procedure

9. The following procedure was used in conducting the inspection of the rigid pavements. Representative features were selected for detailed inspection. The features were then inspected slab** by slab, and the defects were recorded. The locations of the individual pavement features, the inspection starting points, and the directions in which the pavements were inspected (shown by arrows) are indicated in plate 1.

10. The results of the rigid pavement survey for those features that were inspected in detail are presented in table 3. This table

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* A cycle of operation is one landing and one takeoff.

** A slab is the smallest unit, containing no joints, of a given pavement feature.

shows a quantitative breakdown of the various types of defects and a condition rating for each pavement feature inspected in detail. The procedures used for determining the condition rating of a pavement are given in Appendix III of Department of the Army Technical Manual TM 5-827-3, "Rigid Airfield Pavement Evaluation," dated September 1965.

Runway

11. The first 1000 ft of the SE (35) end of the runway (features R1A and R2B) was in excellent condition, with only two major defects noted. Features R5A and R4B, the first 1000 ft of the NW (17) end, were in very good condition. Twelve major defects were noted in these features, nine of which were diagonal cracks, with seven of these being in the two center lanes. The interior portion of the runway (feature R3C), which had a total of 56 major defects (47 of which were in the center 120 ft), was in excellent condition. Photo 1 shows diagonal cracks in four slabs in the center of the runway, approximately 6000 ft from the SE end.

Taxiways

12. The conditions of the taxiways ranged from good to excellent. Taxiway A (feature T2A) was in very good condition, with major defects being most prevalent in the center lane in the area just south of the apron. Apron taxiway A (feature T3A) was also in very good condition, with the major defects being about equally divided among the three lanes. Several slabs had been replaced in this area of the taxiway. The south connecting taxiway, taxiway B (feature T1A), was in very good condition. Five of the seven major defects in this feature were in the center lane. Taxiway E (feature T4A), the north connecting taxiway, contained only eight major defects, none of which were in the center 25 ft. This feature was in very good condition. Taxiways C and D were in excellent condition.

Aprons

13. The parking apron and extension (feature A1B) were in excellent condition based on the percentage of slabs containing no major defects less than 7 percent of the slabs contained defects. About 400 ft from the SE end of the apron, there was an area approximately

200 by 500 ft in which a large percentage of the slabs were discolored from the effects of water rising through the slab joints. Even though water was standing on the surface of some of this area, the survey revealed no abnormal number of defects for this area as compared with the number of defects in areas where there was no evidence of water. The north warm-up apron (feature A2B) contained 27 major defects, 11 of which were in the outer lane. This feature was in very good condition. The south warm-up apron (feature A3B) was in very good condition, with approximately 15 percent of the slabs containing either major or minor defects.

14. All of the pavement features not specifically mentioned in the preceding paragraphs were in conditions ranging from good to excellent.

## Frost Action

### Objectives of inspection

15. One member of the team inspected the pavement facilities for evidence of detrimental frost effects. The objectives of the inspection were to determine:

a. Any adverse effects of frost heave to the pavements during the winter months.

b. Any traffic-induced failures that might be related to thaw weakening of the subgrades or base courses.

### Frost heave

16. The airfield pavements were inspected for surface irregularities indicative of differential frost heaving. The inspection, which was conducted on 8 and 9 August, did not coincide with the period of thawing of frozen base courses and subgrades and therefore the effects of any nonuniform heave probably would not be apparent except in severe cases.

17. Engineers in the Base Civil Engineering Office were queried regarding the development of undesirable surface unevenness during the winter. Pilot testimony regarding runway unevenness was not available, since the last B-52 squadron left this base in early 1971. The consensus

of the survey team, however, was that the runway did not exhibit roughness detectable in an automobile at speeds of up to 50 mph. The rigid pavement runway was considered to be in excellent condition, with no evidence of differential frost heaving.

18. The taxiways and aprons were smooth at the time of inspection and in very good to excellent condition. Engineers in the Base Civil Engineering Office reported no undesirable surface unevenness during the winter or spring. Some minor unevenness was noted at the east end of the south warm-up apron (feature A3B) due to settlement of two concrete slabs. Several of the adjacent slabs appeared to have been mudjacked some time in the past. There was no evidence, however, that this settlement resulted from frost heaving.

19. The runway overruns were as smooth as the adjacent runway rigid pavements, but the flexible shoulder pavements showed evidence of minor roughness. The light bases were flush with the adjacent flexible shoulder pavements, with the exception of a few locations where backfill settlement had caused depressions around the fixtures.

Freezing indices

20. A design freezing index of 1150 degree-days is cited in previous pavement evaluation reports (see paragraph 6b). This value, however, is representative of mean rather than design index severity in this area. Utilizing data from the Burlington, Vermont, Weather Bureau Station, up to and including the 1971-72 season, a design index of 1850 degree-days can be obtained based on the three coldest winters in the past 30. Average monthly temperatures for the months entirely within the freezing seasons and average daily temperatures for the transition months at both ends of the freezing seasons are considered in this determination. Available Air Weather Service mean monthly temperatures for PAFB indicate that the temperature conditions at Burlington and Plattsburgh are very similar, even though they are on opposite sides of Lake Champlain. Seasonal indices after 1957-58 are as follows:

| Freezing Season | Freezing Index degree-days | Freezing Season | Freezing Index degree-days |
|---|---|---|---|
| 1958-59 | 1685 | 1965-66 | 1064 |
| 1959-60 | 1135 | 1966-67 | 1293 |
| 1960-61 | 1644 | 1967-68 | 1617 |
| 1961-62 | 1368 | 1968-69 | 1734 |
| 1962-63 | 1641 | 1969-70 | 1812 |
| 1963-64 | 1362 | 1970-71 | 1821 |
| 1964-65 | 1292 | 1971-72 | 835 |

The indices tabulated above were determined solely on the basis of average monthly temperatures. Indices thus determined are generally somewhat lower than those determined with consideration given to average daily temperatures for the transition months at both ends of the freezing season. The tabulated indices, however, do indicate the relative severity of winters during and following the period that heavy-load aircraft have operated at PAFB. This period includes two winters of design freezing index severity (1969-70 and 1970-71) and several winters approaching design freezing index severity.

21. In view of the fact that experienced freezing indices have been of design magnitudes several times since the pavements have been constructed, the general absence of evidence of differential frost heaving of the pavements is significant. For the above design index, a combined rigid pavement and base thickness of about 95 in. is required for the prevention of subgrade freezing, and combined thicknesses of about 60 to 65 in. are required for limited subgrade frost penetration design. Since the pavements were constructed on the subgrade without base courses, substantial subgrade frost penetration would be expected during all winters. The absence of frost heaving in these pavements is due to the fact that the subgrade soil is a nonfrost-susceptible material. (The report referenced in paragraph 6b(1) includes the results of construction control soil testing.)

Groundwater

22. Data from the reports referenced in paragraph 6 indicate that groundwater has generally been located 5 ft or more below the pavement surface. There are indications, however, that in places

groundwater may be located at or near the pavement surface. Evidence of high groundwater was noted at the SE end of the parking apron where water was bleeding from some of the joints (photo 2) and in the shoulder of the south warm-up apron where water was bleeding from around a light base (photo 3).

Thaw weakening

23. The extent of thaw weakening of the subgrades and base courses could not be readily determined by inspection of the pavements. Pavement failures usually are repaired soon after they occur and usually are not easily examined during a condition survey. However, even where examination is possible, it is often impossible to establish by visual observations whether a failure is the result of thaw weakening or of deficiencies in the thickness of the pavement components with respect to the "normal" period subgrade and loading conditions. The depletion of the fatigue resistance of a pavement system is progressive under repeated loadings and in frost areas is related to thaw weakening in that the rate of depletion is greater during and directly following the frost-melting period. This rate of pavement weakening holds true whether the evidence of fatigue becomes apparent during the melting period or at some other time. The degree of thaw weakening and its effects, if any, on the condition of the pavements at PAFB consequently could not be appraised solely by this inspection. Some limited perception of the severity of thaw weakening effects can be gained, however, by comparing the performance of certain pavement features with what might be expected in the light of current frost design criteria.

24. The rigid pavements had very few load-induced defects despite a 1- to 4-in. deficiency in pavement thickness according to current, normal (nonfrost) heavy-load design criteria (265,000-lb gear loads). The primary pavements, which were designed for medium-load aircraft (100,000-lb gear loads), have not been overloaded by the principal aircraft using the base (B-47's and KC-97's). B-52 aircraft operations (see paragraph 8), however, have overloaded the 14-in. traffic area A and 13-in. traffic area B pavements (see plate 1). The good performance of these pavements can be attributed to the high strength and

nonfrost-susceptible nature of the subgrade soil. Thaw weakening of the subgrade is not considered to have been a factor in the development of the few load-induced defects observed during the survey, and no reduction in the evaluations (table 4) for frost-condition operations is believed warranted.

## Maintenance

25. Maintenance of the airfield pavements at PAFB has consisted primarily of repairing spalls, resealing joints, and replacing a limited number of slabs. Maintenance costs since 1970 have been as follows:

| Year | Cost |
|---|---|
| 1970 | $ 95,000 |
| 1971 | 35,000 |
| 1972 | 170,404 |

During the time of this survey, a spall repair program was in progress. In addition, the runway was being grooved for a distance of 70 ft either side of the center line to create a more skid resistant surface and alleviate the danger of hydroplaning. The joints on the runway were to be sealed at the conclusion of the grooving operation. Photos 4 and 5 show views of the grooved pavements.

## Evaluation

26. A summary of the pavement evaluation is presented in table 4 Previously published pavement evaluations were updated to eliminate aircraft that are no longer in the Air Force inventory and to include aircraft that have been added to the inventory since the last pavement evaluation. The evaluation is based on the pavement thickness, flexural strength (PCC), base and subbase thickness and strength, strength of subgrade (CBR or k value), and the structural condition of the pavement.

## Conclusions

27. The following statements summarize the findings of this investigation:

a. The primary pavements were in very good to excellent condition;

b. The pavements have adequately supported the loadings to which they have been subjected; and

c. No evidence of detrimental effects of frost action was noted, since the subgrade soil is a nonfrost-susceptible material.

Table 1

Airfield Construction History

| Pavement Facility | Dimensions | | Pavement | | Construction | |
|---|---|---|---|---|---|---|
| | Length ft | Width ft | Thickness in. | Type | Year(s) | Agency |
| NE-SW (17-35) runway | 11,760 | 300 | 13 and 14 | PCC | 1954-55 | CE* |
| South warm-up apron | 600± | 225 | 14 | PCC | 1954 | CE |
| Taxiway A | 2,859± | 75 | 14 | PCC | 1955 | CE |
| Taxiway B | 1,100± | 75 | 14 | PCC | 1955 | CE |
| Taxiway C | 1,000± | 75 | 14 | PCC | 1955 | CE |
| Taxiway D | 875 | 75 | 14 | PCC | 1955 | CE |
| Taxiway E | 850 | 75 | 14 | PCC | 1955 | CE |
| Apron taxiway A sta 74+75 to 155+50 | 8,075 | 75 | 14 | PCC | 1955 | CE |
| Parking apron, sta 74+75 to 126+00 | 5,125 | 1075± | 14 | PCC | 1955 | CE |
| Parking apron sta 126+00 to 155+50 | 2,950 | 1075± | 14 | PCC | 1955-56 | CE |
| Docks 2741, 2766, 2793, 2785, 2803, 2818 and access taxiways | Varies | Varies | 13 | PCC | 1955 | CE |
| Access taxiway for docks 2837 and 2890 | 550 | 75 | 13 | PCC | 1955 | CE |
| Hangar aprons (2) and access taxiways (2) | Varies | Varies | 13 | PCC | 1955 | CE |
| North warm-up apron | 800± | 225 | 14 | PCC | 1955 | CE |
| Calibration hardstand (275-ft diam) | | | 14 | PCC | 1955 | CE |
| Apron taxiway A extension sta 155+50 to 163+10± | 760± | 75 | 14 | PCC | 1956 | CE |
| Parking apron extension sta 155+50 to 163+10± | 760± | 1075 | 14 | PCC | 1956 | CE |
| Docks 2837 and 2890 | Varies | Varies | 13 | PCC | 1956 | CE |
| Washrack and 50-ft parking apron widening | Varies | Varies | 13 and 14 | PCC | 1956 | CE |

* CE denotes Corps of Engineers.

Table II

SUMMARY OF PHYSICAL PROPERTY DATA

| FACILITY Plattsburgh AFB, New York | | | | OVERLAY PAVEMENT | | | PAVEMENT | | | BASE | | | SUBGRADE | | GENERAL CONDITION OF AREA CONSIDERED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACILITY NUMBER AND IDENTIFICATION | | LENGTH FT | WIDTH FT | THICK. IN. | DESCRIPTION | FLEX. STR PSI | THICK. IN. | DESCRIPTION | FLEX. STR PSI | THICK. IN. | CLASSIFICATION | CBR OR K | CLASSIFICATION | CBR OR K | |
| R1A | NW-SE runway; 1st 500 ft, SE end | 500 | 300 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 450 | Excellent |
| R2B | NW-SE runway; 2nd 500 ft, SE end | 500 | 300 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 450 | Excellent |
| R3C | NW-SE runway interior | 9760 | 300 | | | | 13 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 450 | Excellent |
| R4B | NW-SE runway; 2nd 500 ft, NW end | 500 | 300 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 350 | Very good |
| R5A | NW-SE runway; 1st 500 ft, NW end | 500 | 300 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 350 | Very good |
| T1A | Taxiway B | 1100± | 75 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 450 | Very good |
| T2A | Taxiway A | 2859± | 75 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 325 | Very good |
| T3A | Apron taxiway A and extension | 8835± | 75 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 325 | Very good |
| T4A | Taxiway E | 850 | 75 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 350 | Very good |
| T5C | Taxiway C | 1000± | 75 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 325 | Excellent |
| T6C | Taxiway D | 875 | 75 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 350 | Excellent |
| T7B | Taxiways G, H, I, J, and K | Variable | Variable | | | | 13 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 350 | Good to excellent |
| A1B | Parking apron and extension | 8835± | 1075± | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 350 | Excellent |
| A2B | North warm-up apron | 800± | 225 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 350 | Very good |
| A3B | South warm-up apron | 600± | 225 | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 300 | Very good |
| A4C | Calibration hardstand (275-ft diam) and taxiway | Irregular | Irregular | | | | 14 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 300 | Good |
| A5B | Hangar and dock aprons | Irregular | Irregular | | | | 13 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 350 | Very good to excellent |
| A6B | Washrack and taxiway F | Irregular | Irregular | | | | 13 | Portland cement concrete | 750 | | | | Sand (SP-SM) | 350 | Excellent |

Table 3

DATE: August 1972

## SUMMARY OF DATA - RIGID PAVEMENT CONDITION SURVEY

AIRFIELD: Plattsburgh AFB, Plattsburgh, New York

| FEATURE NO. | FEATURE DESIGNATION | SLAB SIZE FT | APPROX NO. OF SLABS | PAVE. THICK IN. | NO. OF SLABS CONTAINING INDICATED DEFECTS | | | | | | | | | | | | | | | | % OF SLABS NO DEFECTS | % OF SLABS NO MAJOR DEFECTS | CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | I | — | \ | Δ | * | K | ~ | S | J | ↓ | J | ⊕ | M | P | O | C | D | | | |
| R1A R2B | NW-SE runway; 1st 1000 ft, SE end | 20 by 20 20 by 25 | 560 | 14 | 2 | | | | | | 2 | 1 | 3 | 1 | 1 | | | | 6 | | | 97.2 | 99.4 | Excel-lent |
| R3C | NW-SE runway interior | 20 by 20 20 by 25 | 6832 | 13 | 24 | 13 | 16 | 3 | | | 55 | 6 | 23 | 6 | 22 | | | | 20 | | | 97.4 | 99.4 | Excel-lent |
| R4B R5A | NW-SE runway; 1st 1000 ft, NW end | 20 by 20 20 by 25 | 560 | 14 | 2 | | 9 | 1 | | | 6 | 2 | 4 | 2 | 7 | | | | 2 | | | 94.1 | 97.8 | Very good |
| T1A | Taxiway B | 25 by 20 | 272 | 14 | | 3 | 2 | 2 | | | 2 | | 1 | 2 | 8 | | | | | 1 | | 93.4 | 97.8 | Very good |
| T2A T3A | Taxiway A Apron taxiway A and extension | 20 by 25 | 1813 | 14 | 159 | 4 | 18 | 3 | | | 106 | 14 | 12 | 13 | 19 | 1 | | | 15 | | | 81.3 | 90.2 | Very good |
| T4A | Taxiway E | 25 by 20 | 157 | 14 | 7 | | 1 | | | | 2 | | 1 | 1 | 2 | | | | | | | 91.8 | 95.0 | Very good |
| T5C | Taxiway C | 25 by 20 | 230 | 14 | 1 | 2 | 1 | 1 | | | 18 | | 1 | | | | | | | | | 91.3 | 98.3 | Excel-lent |
| T6C | Taxiway D | 25 by 20 | 200 | 14 | | | | | | | 6 | | | 4 | 3 | | | | | | | 94.1 | 100 | Excel-lent |
| T7B | Taxiway H | 20 by 25 | 155 | 13 | 3 | | 1 | 4 | | | 1 | | 2 | 12 | 9 | | | | | | | 84.0 | 94.9 | Very good |
| T7B | Taxiway I | 25 by 20 | 138 | 13 | 16 | 3 | 3 | 3 | | | 11 | | 3 | 4 | 12 | | | | | | | 71.0 | 85.6 | Good |

REMARKS:

LEGEND:

| | | | | | |
|---|---|---|---|---|---|
| I | LONGITUDINAL CRACK | ~ | SHRINKAGE CRACK | M | MAP CRACKING |
| — | TRANSVERSE CRACK | S | SCALING | P | PUMPING JOINT |
| \ | DIAGONAL CRACK | J | SPALL ON TRANSVERSE JOINT | O | POP-OUT |
| Δ | CORNER BREAK | ↓ | SPALL ON LONGITUDINAL JOINT | C | UNCONTROLLED CONTRACTION CRACK |
| * | SHATTERED SLAB | J | CORNER SPALL | D | "D" CRACKING |
| K | KEYED JOINT FAILURE | ⊕ | SETTLEMENT | | |

WES FORM NO. JUN 1972 2004

(1 of 2 sheets)

Table 3 (Continued)

DATE: August 1972

SUMMARY OF DATA - RIGID PAVEMENT CONDITION SURVEY

AIRFIELD: Plattsburgh AFB, Plattsburgh, New York

| FEATURE NO. | FEATURE DESIGNATION | SLAB SIZE FT | APPROX NO. OF SLABS | PAVE. THICK. IN. | NO. OF SLABS CONTAINING INDICATED DEFECTS | | | | | | | | | | | | | | | | | % OF SLABS NO DEFECTS | % OF SLABS NO MAJOR DEFECTS | CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | I | — | \ | Δ | * | K | ~ | S | J | ↓ | J | ⊕ | M | P | O | C | D | | | |
| T7B | Taxiway J | 25 by 20 | 140 | 13 | 2 | | | | | | 1 | 1 | 1 | 3 | 6 | | | | | | | 90.8 | 98.5 | Excellent |
| T7B | Taxiway K | 25 by 20 | 98 | 13 | 12 | | 4 | 2 | | | 1 | | 1 | 3 | 11 | | | | | | | 80.6 | 83.7 | Good |
| A1B | Parking apron and extension | 20 by 20<br>20 by 25 | *<br>18,516 | 14 | 172 | 95 | 117 | 43 | | | 231 | 27 | 234 | 89 | 275 | | | | 31 | 86 | | 93.4 | 96.0 | Excellent |
| A2B | North warm-up apron | 20 by 20 | 337 | 14 | 15 | 5 | 6 | 1 | | | 12 | 2 | | | 1 | | | | | | | 89.5 | 93.0 | Very good |
| A3B | South warm-up apron | 20 by 20 | 450 | 14 | 10 | 3 | 11 | 9 | | | 20 | | 5 | 8 | 15 | | | | | | | 85.3 | 93.4 | Very good |
| A4C | Calibration hardstand and taxiway | 25 by 25 | 189 | 14 | 12 | 11 | 8 | | 1 | | 26 | 1 | 1 | 5 | 1 | | | | | | | 74.2 | 85.3 | Good |
| A5B | Hangar apron (adjacent to taxiway J) | 25 by 20 | 220 | 13 | | | 3 | 1 | | | 2 | 2 | 4 | 2 | 3 | | | | | | | 98.6 | 98.2 | Excellent |
| A5B | Dock 2766 | 20 by 20 | 139 | 13 | 6 | 1 | 4 | 1 | | | 3 | | | 5 | 1 | | | | | | | 88.5 | 98.2 | Very good |
| A5B | Dock 2741 | 20 by 20 | 123 | 13 | 4 | 1 | | | | | | 2 | 1 | 2 | 1 | | | | | | | 91.2 | 96.2 | Very good |
| | | | | | | | | | | | | | | | | | | | | | | | | |

REMARKS: * Three hundred seventy-seven slabs were discolored; 3014 slabs were not counted because of interference of temporary buildings and parked aircraft.

LEGEND:

| | | | | | |
|---|---|---|---|---|---|
| I | LONGITUDINAL CRACK | ~ | SHRINKAGE CRACK | M | MAP CRACKING |
| — | TRANSVERSE CRACK | S | SCALING | P | PUMPING JOINT |
| \ | DIAGONAL CRACK | J | SPALL ON TRANSVERSE JOINT | O | POP-OUT |
| Δ | CORNER BREAK | ↓ | SPALL ON LONGITUDINAL JOINT | C | UNCONTROLLED CONTRACTION CRACK |
| * | SHATTERED SLAB | J | CORNER SPALL | D | "D" CRACKING |
| K | KEYED JOINT FAILURE | ⊕ | SETTLEMENT | | |

WES FORM NO. 2004
JUN 1972

(4 of 2 sheets)

Table 4

SUMMARY OF PAVEMENT EVALUATION

| NAME OF AIRFIELD: Plattsburgh AFB, New York<br>DATE OF EVALUATION<br>MONTH: August YR: 1972 | | | LOAD-CARRYING CAPACITY IN LB OF GROSS PLANE LOAD FOR INDICATED LANDING GEAR TYPES AND CONFIGURATIONS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TRICYCLE ARRANGEMENT | | | | | | | | | BICYCLE | |
| FEATURE | | PAVEMENT OPERATIONAL USE | SINGLE 100-PSI TIRE PRESSURE | SINGLE 100-SQ-IN. CONTACT AREA | SINGLE 241-SQ-IN. CONTACT AREA | TW 28-IN. C-C 226-SQ-IN. CONTACT AREA EACH TIRE | SINGLE TANDEM 60-IN. SPACING 400-SQ-IN. CONTACT AREA | TW 37-IN. C-C 267-SQ-IN. CONTACT AREA EACH TIRE | TW 44-IN. C-C 530-SQ-IN. CONTACT AREA EACH TIRE | TWIN TANDEM 33-IN. × 40-IN. 208-SQ-IN. CONTACT AREA EACH TIRE | C-5A GEAR CONFIGURATION | TA - TWIN [illegible] 62-37 [illegible] SQ-IN. CONTACT AREA EACH TIRE | REMARKS |
| NO. | DESIGNATION | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| R1A<br>R5A<br>T4A | NW-SE runway; 1st 500 ft, SE end; 1st 500 ft, NW end; and taxiway E | Capacity | 155,000+ | 85,000+ | 155,000+ | 220,000+ | 200,000+ | 235,000 | 320,000 | 380,000+ | 800,000+ | 370,000 | |
| R2B<br>R4B<br>A1B<br>A2B | NW-SE runway; 2nd 500 ft, SE end; 2nd 500 ft, NW end; parking apron and extension; and north warm-up apron | Capacity | 155,000+ | 85,000+ | 155,000+ | 220,000+ | 200,000+ | 280,000 | 330,000+ | 380,000+ | 800,000+ | 400,000 | |
| R3C | NW-SE runway interior | Capacity | 155,000+ | 85,000+ | 155,000+ | 220,000+ | 200,000+ | 330,000 | 330,000+ | 380,000+ | 800,000+ | 470,000 | |
| T1A | Taxiway B | Capacity | 155,000+ | 85,000+ | 155,000+ | 220,000+ | 200,000+ | 220,000 | 300,000 | 380,000+ | 800,000+ | 340,000 | |
| T2A | Taxiway A | Capacity | 150,000 | 85,000+ | 155,000+ | 215,000 | 200,000+ | 205,000 | 275,000 | 380,000+ | 800,000+ | 320,000 | |
| T3A | Apron taxiway A and extension | Capacity | 155,000+ | 85,000+ | 155,000+ | 220,000+ | 200,000+ | 225,000 | 300,000 | 380,000+ | 800,000+ | 350,000 | |
| T5C | Taxiway C | Capacity | 155,000+ | 85,000+ | 155,000+ | 220,000+ | 200,000+ | 330,000+ | 330,000+ | 380,000+ | 800,000+ | 500,000 | |
| T6C | Taxiway D | Capacity | 155,000+ | 85,000+ | 155,000+ | 220,000+ | 200,000+ | 330,000+ | 330,000+ | 380,000+ | 800,000+ | 440,000 | |
| T7B<br>A5B<br>A6B | Taxiways F, G, H, I, J, and K; hangar and dock aprons; and washrack | Capacity | 150,000 | 85,000+ | 155,000+ | 220,000 | 200,000+ | 250,000 | 330,000+ | 380,000+ | 800,000+ | 350,000 | |
| A3B | South warm-up apron | Capacity | 155,000+ | 85,000+ | 155,000+ | 220,000+ | 200,000+ | 260,000 | 330,000+ | 380,000+ | 800,000+ | 370,000 | |
| A4C | Calibration hardstand | Capacity | 155,000+ | 85,000+ | 155,000+ | 220,000+ | 200,000+ | 330,000+ | 330,000+ | 380,000+ | 800,000+ | 490,000 | |
| | | | | | | | | | | | | | |

Note: + sign denotes allowable gross loading greater than maximum gross weight of any existing aircraft having indicated gear configuration.
The pavements are adequately protected against frost action.

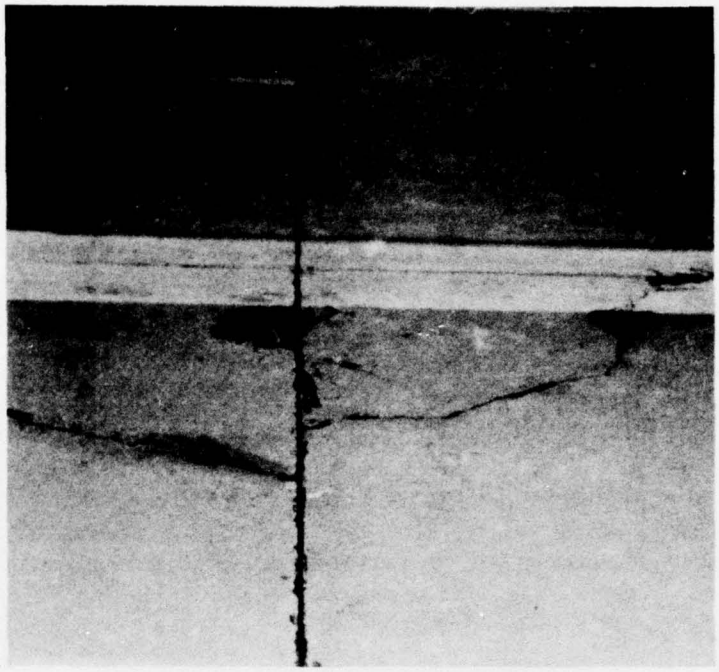


Photo 1. Diagonal cracks in four slabs in center of runway, approximately 6000 ft from SE end

Photo 2. Water bleeding from joints in SE end of parking apron

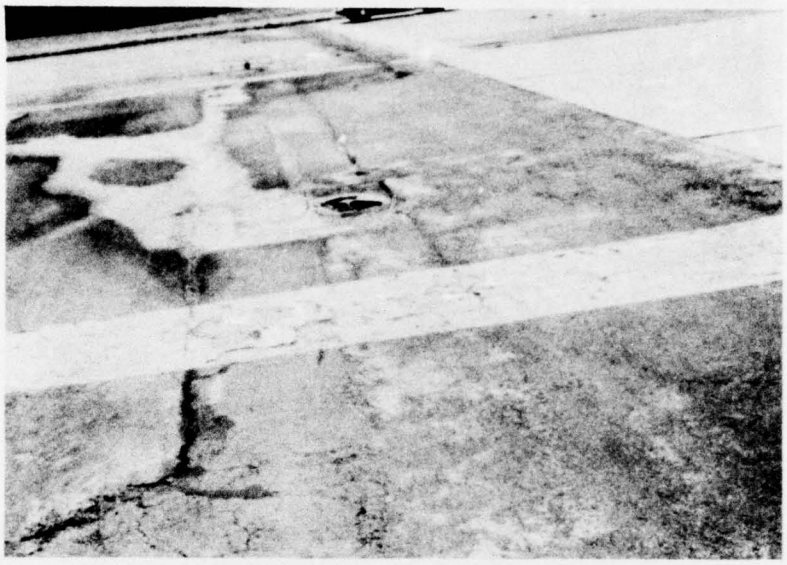


Photo 3. Water bleeding from around light base in shoulder of south warm-up apron

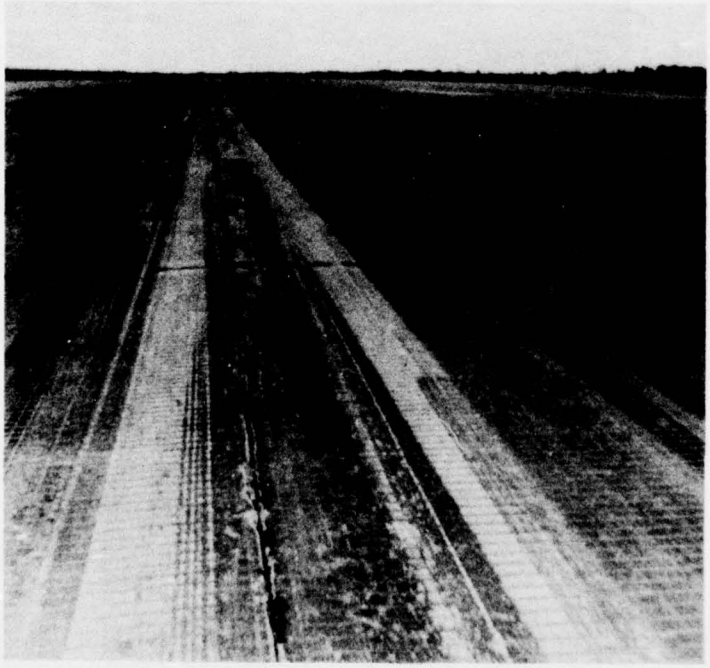


Photo 4. View of grooved pavement looking down runway

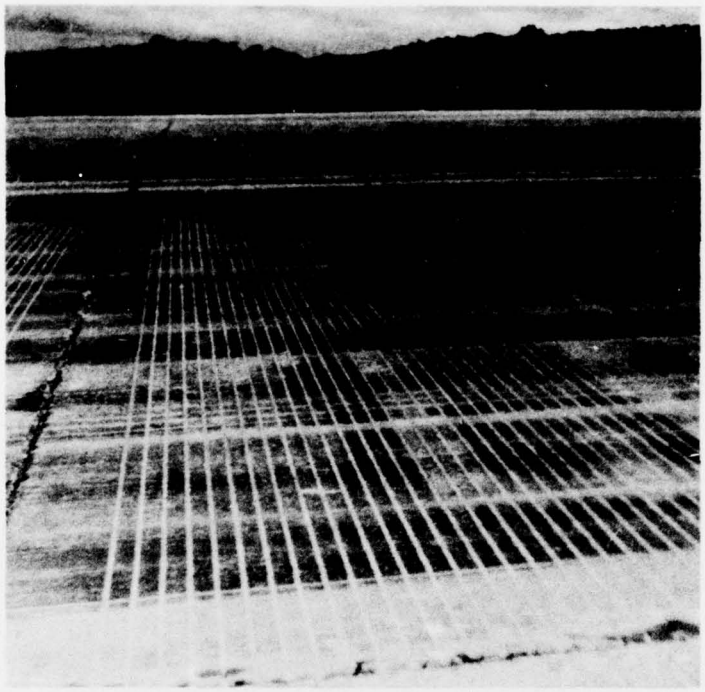


Photo 5. View of grooved pavement
looking across runway


VICINITY MAP
SCALE IN MILES
1 0 1 2

LEGEND

PORTLAND CEMENT CONCRETE

BLAST PAVEMENT (AC – NONTRAFFIC)

DOUBLE BITUMINOUS SURFACE TREATMENT

R2B / 14" PCC ← FEATURE DESIGNATION (SEE NOTE 1)
← SURFACE PAVEMENT THICKNESS AND TYPE

TYPE OF FEATURE (SEE NOTE 1)

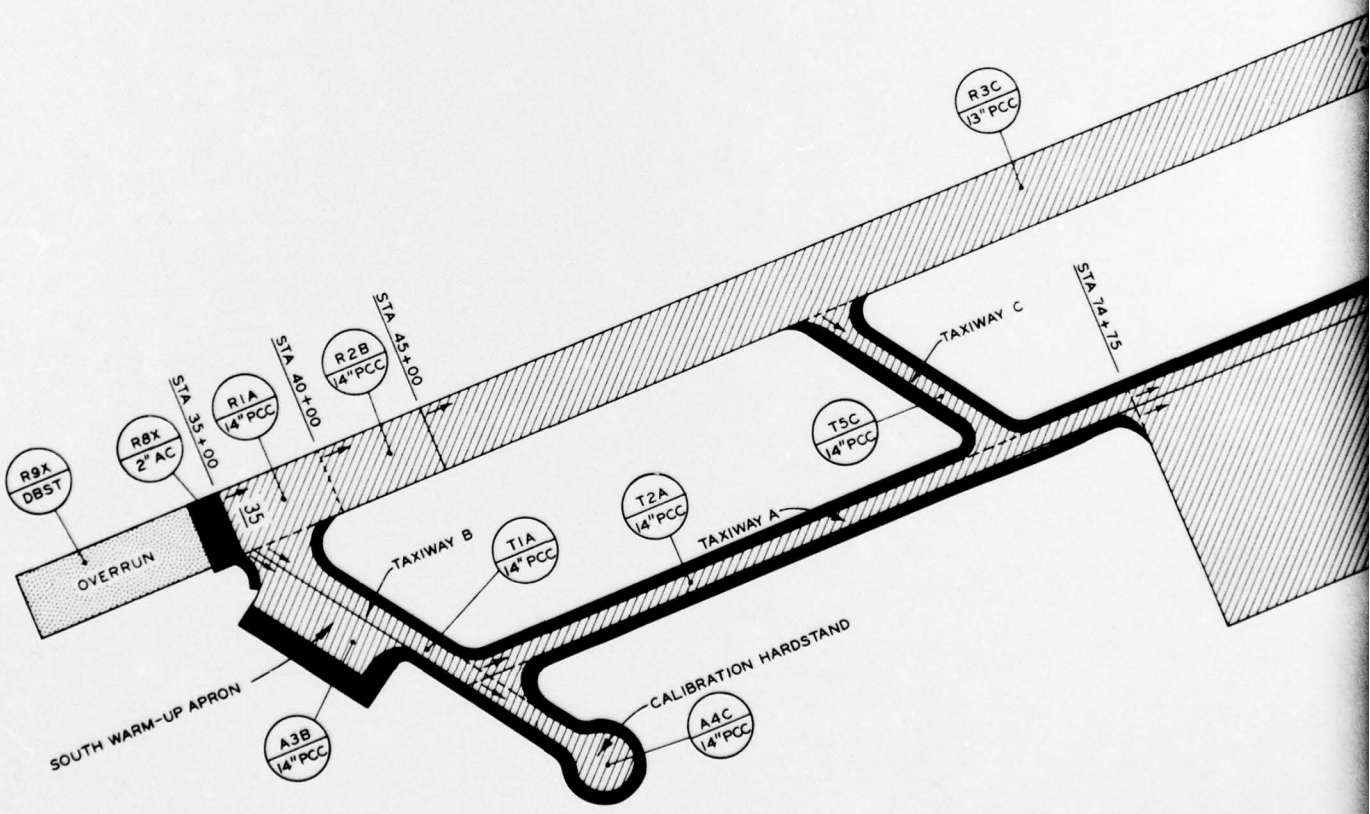
R – RUNWAY
T – TAXIWAY
A – APRON

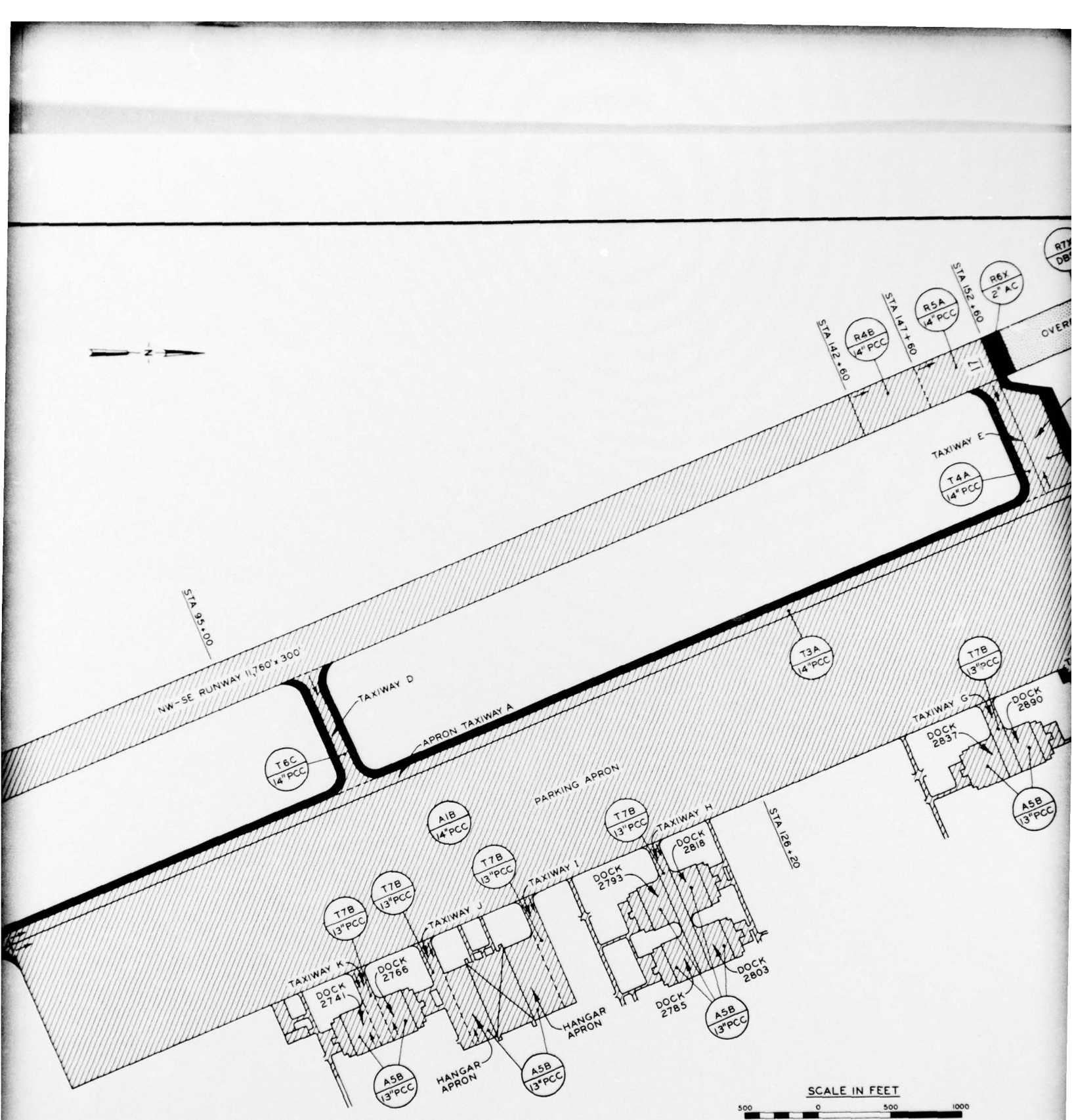
TYPE TRAFFIC AREA (SEE NOTE 2)

A – A TYPE TRAFFIC
B – B TYPE TRAFFIC
C – C TYPE TRAFFIC
X – NO TRAFFIC TYPE ASSIGNED

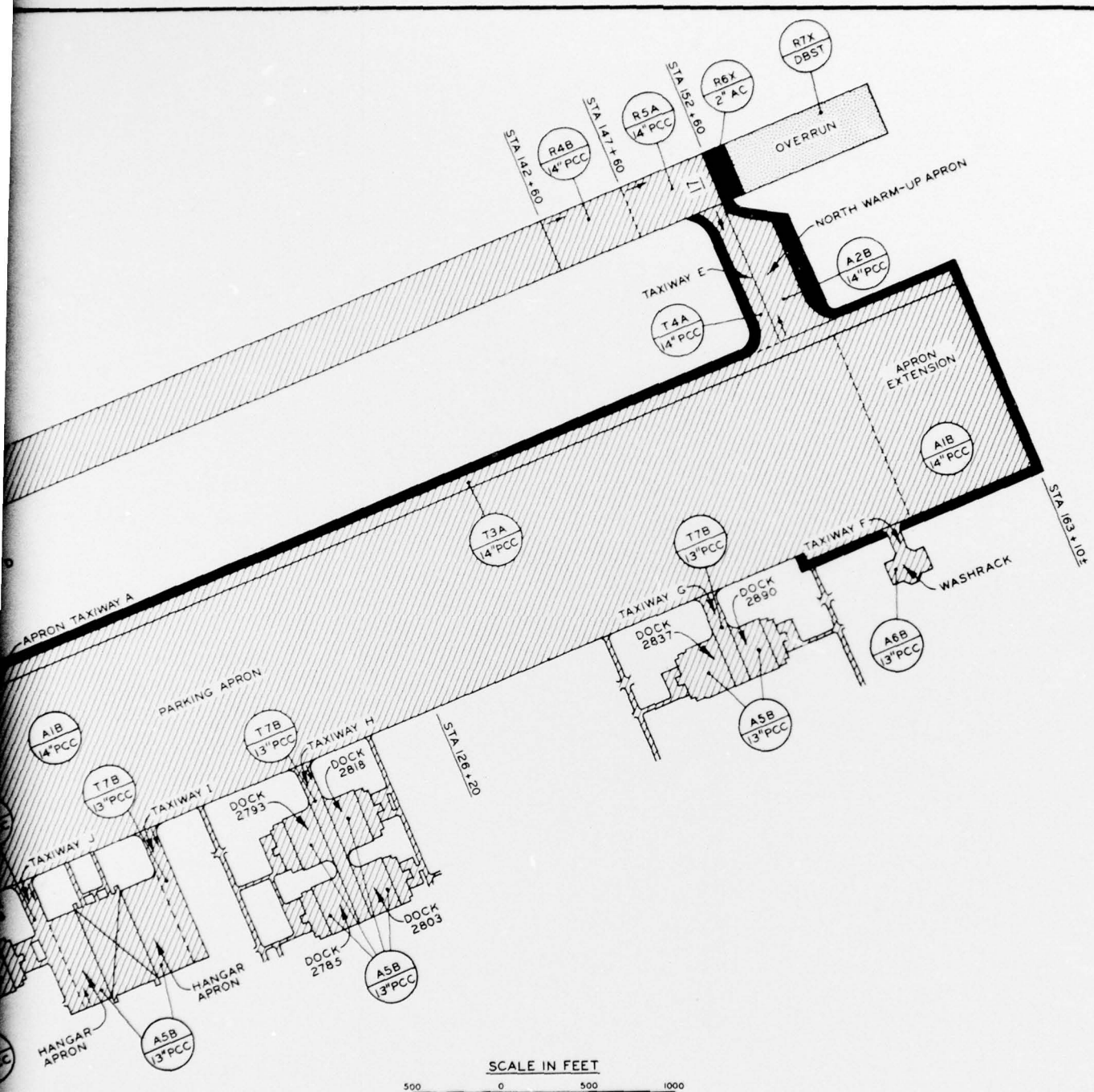
AC – ASPHALTIC CONCRETE
PCC – PORTLAND CEMENT CONCRETE
DBST – DOUBLE BITUMINOUS SURFACE TREATMENT
→ DIRECTION OF SURVEY

NOTES: 1. FEATURE DESIGNATION DENOTES TYPE OF FEATURE, NUMBER OF FEATURE FOR GIVEN TYPE, AND TYPE TRAFFIC AREA.
2. TRAFFIC AREA DESIGNATIONS ARE BASED ON HEAVY-LOAD CRITERIA.




N
STA 142+60
R4B 14" PCC
STA 147+60
R5A 14" PCC
STA 152+60
R6X 2" AC
TAXIWAY E
T4A 14" PCC
STA 95+00
NW-SE RUNWAY 11,760' x 300'
TAXIWAY D
APRON TAXIWAY A
T6C 14" PCC
T3A 14" PCC
T7B 13" PCC
TAXIWAY G
DOCK 2890
DOCK 2837
A5B 13" PCC
PARKING APRON
A1B 14" PCC
T7B 13" PCC
TAXIWAY H
DOCK 2818
STA 128+20
T7B 13" PCC
T7B 13" PCC
T7B 13" PCC
TAXIWAY I
TAXIWAY J
DOCK 2793
TAXIWAY K
DOCK 2766
DOCK 2741
DOCK 2785
DOCK 2803
A5B 13" PCC
HANGAR APRON
HANGAR APRON
A5B 13" PCC
A5B 13" PCC
SCALE IN FEET
500 0 500 1000

AIRFIELD




PLATTSBURG AFB

## AIRFIELD LAYOUT AND PAVEMENT PLAN

PLATE 1